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C-A OPERATIONS PROCEDURES MANUAL

11.4.6 Procedure for Bypassing the STAR Safety Interlock Systems

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Hand Processed Changes

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Approved: _____ **Signature On File** _____
Collider-Accelerator Department Chairman Date

A. Stevens

11.4.6 Procedure for Bypassing the STAR Safety Interlock Systems

1. Purpose

The scope of this procedure is those safeguards and operations that are necessary if one wishes to implement a Bypass for one of the STAR Equipment Safety Interlock Systems.

2. Responsibilities

STAR Shift Leaders.

3. Prerequisites

In order to implement a Bypass for any of the STAR Equipment Safety Systems, the following requirements must be met:

- 3.1 C-A User training
- 3.2 STAR Hazard Awareness Training
- 3.3 STAR Equipment Safety System Bypass Authorization. (See Attachments 6.1, 6.2, and 6.3)

4. Precautions

The STAR detector system has a number of interlock systems for equipment protection. The global interlock system is known as the STAR Global Interlock System (SGIS). Many of the detector sub systems in STAR have their own equipment protection interlock systems. Two notable examples of these sub system interlock systems are those associated with the Time Projection Chamber (TPC) and the Ring Imaging Cherenkov (RICH) detector.

A common trait of these systems is that they have been designed to monitor various input signals from in and around the detector and the STAR facility. If they detect a possible problem they take action to place the appropriate part or parts of the detector in a safe state, without any human intervention or action necessary. Given this important role, bypassing any of the functions of these systems must be done in a careful, considered fashion, by an individual with sufficient knowledge of the particular interlock system. An individual needs authorization to implement an interlock system bypass.

5. Procedure

SGIS System

Bypasses may only be implemented or authorized for the SGIS system, on a case by case basis, by one of the individuals listed in attachment 8.1.

There are a specific number of bypasses associated with the SGIS system which require the notification and consent of the C-A Operations Coordinator (x4662). These bypasses which require the notification and consent of the C-A Operations Coordinator are:

- To bypass any of the smoke detector signals
- To Bypass the STAR detector based flammable gas detector signal
- To Bypass the shunt trip of the 480 VAC Detector “dirty” power circuit breaker
- To Bypass the shunt trip of the 480 VAC Detector “clean” power circuit breaker
- To take the SGIS system out of running mode

All changes, alarms, and incidents concerning the SGIS system must be logged in the Log book which is attached to the main SGIS rack in the STAR DAQ room.

TPC System

Bypasses may only be implemented or authorized for the TPC system, on a case by case basis, by one of the individuals listed in attachment 8.2.

RICH System

Bypasses may only be implemented or authorized for the RICH system, on a case by case basis, by one of the individuals listed in attachment 8.3.

6. Documentation

Each of the safety systems, SGIS, TPC, and RICH, have a document that describes their design and operation.

- 6.1 CSN0361B - Requirements for STAR Global Interlock System
- 6.2 Allen Bradley Interlock System for the STAR TPC Gas System, Version 2.4, SOP-TPC-GAS-06-A.
- 6.3 Interlock System of the STAR RICH Gas System (to become a controlled STAR Note).

7. References

None.

8. **Attachments**

- 8.1 [C-A-OPM-ATT 11.4.6.a “List of Authorized People for the STAR SGIS Interlock System”](#).
- 8.2 [C-A-OPM-ATT 11.4.6.b “List of Authorized People for the STAR TPC Interlock System”](#)
- 8.3 [C-A-OPM-ATT 11.4.6.c “List of Authorized People for the STAR RICH Interlock System”](#)